

Information Technologies for Set-designers

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The project *The set-designer and the instruments of his days—New information technologies for the theatre* was proposed in the second edition of the Solomon R. Guggenheim Foundation competition, Impresa & Cultura, Intrapresae Collezione Guggenheim enterprise, being awarded a mention by the jury for the originality of the application in a typical Italian field, the opera theatre, in need of deep innovations.

The complete system used for the project consisted of a powerful computer along with specialized software for solid modelling, ALIAS, and a sophisticated program for modifying photographs and image processing used to apply materials to the graphic structure.

The author, graduated from the Art Academy of Brera in Milan, was hired to lead the technical part of the project. He had used information technology preparing his exams at the Academy, where he had already realized virtual set-design. On the occasion of the introduced project was trained in the Alias software secrets and he could work closely with the professionals of the Stage setting departments of the theatres involved in the experimental project. At the same time he could finish his studies with a thesis on the use of computer technologies in the theatre.

The first step was the creation of the three-dimensional model of the theatre and in particular of the stage, a skeleton made on computer, a virtual place in which the set could be placed.

Once the structure was 'constructed' virtually, the usefulness of the computer

was immediately apparent as an irreplaceable tool for analyzing possible solutions for forms, colors and lights. Once the theatre was 'designed' and the set was 'put up', the project followed the suggestions and recommendations of the experts and entered the experimentation phase where solutions and alternatives were proposed and verified in real time.

The elements which made up the set could be modified or simply shifted very easily, moved by simulating the set changes and then transformed into technical designs for creating the physical structures.

By moving virtually inside the theatre the points of view from the various individual seats could be determined and the defects or mistakes in the set could be evaluated.

You could 'sit' in the first row and 'watch' the stage as if you were really in the theatre.

The result was a perfect simulation, both in terms of perspective and in terms of the lighting, of the different sets placed in a realistic space before the set was physically built. The great advantage offered by virtual planning is the possibility to see the final effect, which can be achieved and also to modify it as necessary. This represents a significant saving of time and especially of money, and overcomes the traditional phase of building models and testing the sets.

The first sets created on the computer were those for the opera Lucia di Lammermoor by G. Donizetti. These were adapted, from an earlier edition produced in 1973, for the unusual environment of the PalaFenice, temporary home for the opera season in

Venice. Another place alien to the theatre was the Palazzo della Ragione in Padua where the second sets simulated on the computer were used for the opera *Romeo et Juliette* by W. Shakespeare with music by H. Berlioz.

After the encouraging results obtained at the Gran Teatro La Fenice in Venice, the project continued with the Teatro dell'Opera in Rome. Here the significant work included the design of the entire structure of the theatre, in this case a 'real' theatre (stalls, tiers of boxes, balcony and the stage equipment, with curtains and warehouses), and the design of the sets for the opera *Boris Godunov* of M. P. Musorgskij, with especial attention to the lighting.

Simulation is not a game in itself, but rather a useful tool to obtain the best result in the least time and with limited expenses, thanks to the unlimited verifications, which can be made with the virtual model before the sets are constructed, and the lighting put into place.

Once the solutions for the design and building of a set were verified, the next step of the project would be to re-use the digital material created and gathered during the work, especially in view of a new production of the same opera in the same theatre or in another structure. Computer tools and telecommunications would significantly facilitate the exchange of the sets, a daily routine in running a theatre. The adaptability of the different elements of the sets to the new structure could be very quickly verified by quantifying and programming the necessary modifications with precision and speed.

The development of the project includes a proposal to solve the difficult problem of archiving the set designs of the operas. Since the material to be collected and preserved is of various kinds (technical designs, sketches, costumes, texts, images, recordings, films, etc.), the computer could be the optimal 'container' in which all the

material involved could be digitally archived. The necessary information could be recovered easily at any time.

The encouraging results obtained and the possible future uses of the computer in set design have stimulated new initiatives and experiments for the current year.

The Stage setting department of the Rossini Opera Festival in Pesaro proposed to participate in the production of the opera *La Cenerentola* which is scheduled for the 1998 program.

The experiments at the Teatro alla Scala have also begun again very enthusiastically. In this case the attention was concentrated on the virtual construction of the stage and on the careful analysis of the complex mechanics of the set elements in order to verify their use and effectiveness in the preparation of the productions which will be staged during the next opera season in Milan, *Götterdämmerung* by R. Wagner, which opens the '98-'99 season, *Die Frau ohne Schatten* by R. Strauss, re-elaborated from an earlier edition produced for Scala in 1985, *La forza del destino* by G. Verdi, scheduled for the next february.

Productions

1994	Teatro alla Scala, Milan	Die Walküre by R. Wagner
1997	PalaFenice, Venice	Lucia di Lammermoor by G. Donizetti
1997	Palazzo della Ragione, Padua	Romeo et Juliette by H. Berlioz
1998	Rossini Opera Festival, Pesaro	La Cenerentola by G. Rossini
1998	Nuovo Piccolo Teatro, Milan	Carillon by A. Clementi
1998	Teatro dell'Opera, Rome	Boris Godunov by M. Musorgskij
1998	Teatro alla Scala, Milan	Götterdämmerung by R. Wagner
1998	Teatro alla Scala, Milan	Die Frau ohne Schatten by R. Strauss
1998	Teatro alla Scala, Milan	La forza del destino by G. Verdi
1999	Teatro dell'Opera, Rome	Norma by V. Bellini